W02983-QES

STL-St. Louis

Quanterra
Environmental Services

Quanterra Incorporated
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0052817

CASE NARRATIVE

Bechtel Hanford Incorporated
3350 George Washington Way
Richland, Washington 99352

February 10, 2000

Attention: Joan Kessner

Project Number	:	33548
SDG	:	W02983
Number of Samples	:	one (1)
Sample Matrix	:	Water
Data Deliverable	:	Summary
Date SDG Closed	:	December 16, 1999

II. Introduction

On December 16, 1999, one (1) "water" sample was received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. The samples were received within temperature criteria. See the attached Sample Summary sheet for the client and lab Ids for these samples.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

Analyses requested:
pH - 150.1
Sulfate - 375.4
Chlorine (Total Residual) - 330.3
VOA - 8260A (TCL)

Deviation from Request: There were no deviations.

Data is Incomplete without Case Narrative

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
MS- Matrix Spike.
DUP- Matrix Duplicate
MSD- Matrix Spike Duplicate.

V. Comments

General: The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

Please refer to the attached cross-reference table for the standard preparation methods used at Quanterra, St. Louis.

VOA: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

MSD has BFB low. The recoveries and RPD are fine.

Wet Chemistry: A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Duplicate were analyzed with each preparation batch per the protocol for this analysis. A duplicate was analyzed as QC for the pH and Residual Chlorine analyses.

The iodine used for the Residual Chlorine Blank back titration was expired. The data does not indicate that the reagent had deteriorated. The data is being reported with Non-Conformance memo F00021.

There were no other comments or non-conformances associated with the Wet Chemistry data.

Bechtel Hanford Incorporated
February 11, 2000
Project Number: 33548
SDG: W02983

I certify that this Data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Mark Ward
St. Louis Project Manager

SAMPLE SUMMARY

F9L210106

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
D6ME8	001	B0X5V1	12/15/99	08:39

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F9L210106

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH (Electrometric)	MCAWW 150.1	MCAWW 150.1
Residual Chlorine 330.3	MCAWW 330.3	
Sulfate	MCAWW 375.4	MCAWW 375.4
Volatile Organics by GC/MS	SW846 8260A	SW846 5030/8260

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

Quanterra

Clouseau

Nonconformance Memo

NCM #:	F00021	Classification:	**Deficiency**
NCM Initiated By:	Kress, Tracey	Status:	**GLREVIEW**
Date Opened:	01/20/00	Production Area:	Classical Chemistry
Date Closed:	N/A	Tests:	330.3
		Lot #'s (Sample #'s):	F0A140206 (1); F0A190000 (372); F9L210106 (1); F9L300207 (1)
		QC Batch:	0019372
Nonconformance:	Expired standards		
Subcategory:	Use of expired standards		

Problem Description / Root Cause

Name	Date	Description
Kress, Tracey	01/20/00	Iodine used for blank back titration was expired. Reagent was used and problem was not discovered until report was generated.

Corrective Action

Name	Date	Corrective Action
Kress, Tracey	01/20/00	Data did not reflect signs that reagent had deteriorated. Data was reported as is.

Quality Assurance Verification

Verified By	Due Date	Status	Notes:
Kleszczewski, Jim	N/A	Verified/completed	New reagent ordered.

Approval History

Name	Date Approved:	Position
Kress, Tracey	01/20/00	Chemist
Ward, Marti	01/28/00	Project Manager
Kleszczewski, Jim	02/10/00	Quality Assurance

Date Printed: 02/11/00

Data is Incomplete without Case Narrative

PSL20300
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QUANTERRA INCORPORATED
CLIENT ANALYSIS SUMMARY
Quanterra - St. Louis

Run Date: 1/03/00
Time: 15:07:40
User Id.: SCHREMPC

CLIENT: 127642 BECHTEL HANFORD, INC.
PROJECT MANAGER: MARTI WARD
PROJECT #: PERMIT MONITOR
REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981
SITE: B99-018
AMOUNT REC"D: 20P,125,250P,1LP,3X40V
STORAGE LOC: T11A
LOT COMMENTS:
MATRIX: WATER
SAMPLE ID: B0X5V1
QC PACKAGE: Special Report - see checklist
SAMPLE COMMENTS:
RUN DUP ON PH,SULFATE,RESIDUAL CHLORINE
Beginning Depth: .00 **Ending Depth:** .00

QUOTE/SAR #: 33548
LAB ID: F-9L210106-001
WORK ORDER: D6ME8
RECEIVING DATE: 12/20/99
SAMPLING DATE: 12/15/99
ANALYTICAL DUE DATE: 1/19/00N
REPORT DUE DATE: 2/05/00
PRIORITY: 29
SAMPLING TIME: 8:39
RECEIVING TIME: 9:00

SDG# : W02983

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A) PURGE AND TRAP - 5 mL purge STL: SW-846 8260A (I-15-MZ-01) D6ME8-1-01 Protocol: A QC Program: STANDARD TEST SET	06	12/21/99	0/00/00	12/29/99
pH - Aqueous (150.1) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (I-88-AJ-01) D6ME8-1-1W Protocol: A QC Program: STANDARD TEST SET	06	12/21/99	0/00/00	12/17/99
Chlorine, Residual (330.3) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (I-88-RD-01) D6ME8-1-21 Protocol: A QC Program: STANDARD TEST SET	06	12/21/99	0/00/00	12/16/99
Sulfate 375.4) NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION (I-88-UV-01) D6ME8-1-24 Protocol: A QC Program: STANDARD TEST SET	06	12/21/99	0/00/00	1/12/00

PSL20300 QUANTERRA INCORPORATED Run Date: 1/03/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 15:07:40
Quanterra - St. Louis User Id.: SCHREMPC

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 33548
PROJECT MANAGER: MARTI WARD LAB ID: F-9L210106-001-D
PROJECT #: PERMIT MONITOR WORK ORDER: D6ME8 MSD
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 12/20/99
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 12/15/99
SITE: B99-018 ANALYTICAL DUE DATE: 1/19/00N
AMOUNT REC"D: 20P,125,250P,1LP,3X40V REPORT DUE DATE: 2/05/00
STORAGE LOC: T11A PRIORITY: 29
LOT COMMENTS: SAMPLING TIME: 8:39
MATRIX: WATER RECEIVING TIME: 9:00
SAMPLE ID: B0X5V1
QC PACKAGE: Special Report - see checklist SDG# : W02983
SAMPLE COMMENTS:
RUN DUP ON PH,SULFATE,RESIDUAL CHLORINE
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	12/21/99	0/00/00	12/29/99

PURGE AND TRAP - 5 mL purge
STL: SW-846 8260A
(I-15-MZ-01) D6ME8-1-03 Protocol: A QC Program: STANDARD TEST SET

PSL20300 QUANTERRA INCORPORATED Run Date: 1/03/00
Page 1 CLIENT ANALYSIS SUMMARY Time: 15:07:40
Quanterra - St. Louis User Id.: SCHREMPC

CLIENT: 127642 BECHTEL HANFORD, INC. QUOTE/SAR #: 33548
PROJECT MANAGER: MARTI WARD LAB ID: F-9L210106-001-S
PROJECT #: PERMIT MONITOR WORK ORDER: D6ME8 MS
REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 12/20/99
P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 12/15/99
SITE: B99-018 ANALYTICAL DUE DATE: 1/19/00N
AMOUNT REC'D: 20P,125,250P,1LP,3X40V REPORT DUE DATE: 2/05/00
STORAGE LOC: T11A PRIORITY: 29
LOT COMMENTS: SAMPLING TIME: 8:39
MATRIX: WATER RECEIVING TIME: 9:00
SAMPLE ID: B0X5V1
QC PACKAGE: Special Report - see checklist SDG# : W02983
SAMPLE COMMENTS:
RUN DUP ON PH,SULFATE,RESIDUAL CHLORINE
Beginning Depth: .00 **Ending Depth:** .00

***** ANALYSIS *****	WRK LOC	REQUEST DATE	EXTRACTION EXP DATE	ANALYSIS EXP DATE
Volatile Organics, GC/MS (8260A)	06	12/21/99	0/00/00	12/29/99
PURGE AND TRAP - 5 mL purge				
STL: SW-846 8260A				
(I-15-MZ-01) D6ME8-1-02 Protocol: A QC Program: STANDARD TEST SET				
Sulfate 375.4)	06	12/21/99	0/00/00	1/12/00
NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION				
(I-88-UV-01) D6ME8-1-25 Protocol: A QC Program: STANDARD TEST SET				

CUR#020471 20

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-018-29	Page 1 of 1
Collector R. Nielson W02983	Company Contact Dorman Blankenship	Telephone No. 373-5456	Project Coordinator TRENT, SJ	Price Code 7N / Air Quality ☐ / Data Turnaround 45 Days
Project Designation 183N Backwash Discharge Pond – Permit Monitoring	Sampling Location 183 N		SAF No. B99-018	
Ice Chest No. ERC-99-023	Field Logbook No. EL-1381-3	COA 7TBK27YA40	Method of Shipment Federal Express	
Shipped To Quanterra Incorporated St. Louis	Offsite Property No. A000073		Bill of Lading/Air Bill No. 4235795 3 2955	

POSSIBLE SAMPLE HAZARDS/REMARKS

W02983

Special Handling and/or Storage

Preservation	None	None	Cool 4C	None	HCl or H2SO4 to pH <2 Coo					
Type of Container	P	P	P	P	aGs*					
No. of Container(s)	1	1	1	1	3					
Volume	20mL	125mL	250mL	1000mL	40mL					

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Activity Scan 100% Full	pH - 150.1	Sulfate – 375.4	Chlorine (Total residual) - 330.3	VOA - 8260A (TCL)					
B0X5V1	Water	12/15/99	0839	X	X	X	X	X					

CHAIN OF POSSESSION

Relinquished By	Date/Time	Received By	Date/Time
R. Nielson	12/15/99 0855	R. Thoren	12.15.99/0855
R. Thoren	12.15.99/1300	Rupp SC	12.15.99/1300
Rupp SC	12.16.99/0700	R. Thoren	12.16.99/0700
R. Thoren	12.16.99/1430	FEDEX	
FEDEX	12 20 99	Jason Niemann	12.20.99 0900

Sign/Print Names

SPECIAL INSTRUCTIONS

** Close SDG upon receipt of samples.

Sample originated in NON RAD Controled AREA. <2000 pCi/g
No TA Required

Matrix *
S=Soil
SE=Sediment
SO=Solid
S=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION — Received By: Jason Niemann — Title — Date/Time: 12-20-99 0900

FINAL SAMPLE DISPOSITION — Disposal Method — Disposed By — Date/Time

BHI-EE-011 (10/99)

Quanterra Environmental Services

020477

Login No.: F9L210106
W02983

Condition Upon Receipt Variance Report
St. Louis Laboratory

Client: Bechtel Hanford
Project No: 33548
Shipper/No: FEDEX/4235 7953 2925

Date: 12-20-99 Time: 0900
Initiated by: LJason Tiemann
RFA/COC Numbers: B99-018-29

Condition/Variance (Check all that apply):

1. ☐ Sample received broken/leaking.
2. ☐ Sample received without proper preservative.
   - ☐ Cooler temperature not within 4°C ± 2°C
     Record temperature: _____
   - ☐ pH _____
   - ☐ other: _____
3. ☐ Sample received in improper container.
4. ☐ Sample received without proper paperwork. Explain: _____
5. ☐ Paperwork received without sample.
6. ☐ No sample ID on sample container.
7. ☐ Custody tape disturbed/broken/missing/not tamper evident type (circle all that apply).
8. ☐ Sample ID on container does not match sample ID on paperwork. Explain: _____
9. ☐ All coolers on airbill not received with shipment.
10. ☐ Other (explain below): _____

☒ No variances were noted during sample receipt. Cooler Temperature Upon Receipt: 2°

Temperature Variance Does Not Affect the Following Analyses: _____

Notes: _____

Corrective Action:

☐ Client's Name: _____ Informed verbally on: _____ By: _____

☐ Client's Name: _____ Informed in writing on: _____ By: _____

☐ Sample(s) processed "as is".

Comments: _____

☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor Review: for Jason Tiemann Date: 12-20-99

Project Management Review: Sheila Lawrence Date: 12-22-99

SL-ADMIN-0004, Revised 6/29/99

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

BECHTEL HANFORD, INC.

Client Sample ID: B0X5V1

GC/MS Volatiles

Lot-Sample #...: F9L210106-001 **Work Order #...:** D6ME8101 **Matrix.....:** WATER
Date Sampled...: 12/15/99 **Date Received..:** 12/20/99
Prep Date.....: 12/26/99 **Analysis Date..:** 12/26/99
Prep Batch #...: 9362234
Dilution Factor: 1 **Method.....:** SW846 8260A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Chloromethane	ND	10	ug/L
Vinyl chloride	ND	10	ug/L
Bromomethane	ND	10	ug/L
Chloroethane	ND	10	ug/L
Acetone	ND	20	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
Methylene chloride	ND	5.0	ug/L
Carbon disulfide	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
2-Butanone	ND	20	ug/L
1,2-Dichloroethene (total)	ND	5.0	ug/L
Chloroform	**13**	**5.0**	**ug/L**
1,1,1-Trichloroethane	ND	5.0	ug/L
Carbon tetrachloride	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
Benzene	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
1,2-Dichloropropane	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
4-Methyl-2-pentanone	ND	20	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
2-Hexanone	ND	20	ug/L
Tetrachloroethene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Ethylbenzene	ND	5.0	ug/L
Xylenes (total)	ND	10	ug/L
Styrene	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	81	(80 - 123)
Toluene-d8	98	(77 - 131)
Dibromofluoromethane	103	(88 - 139)

BECHTEL HANFORD, INC.

B0X5V1

GC/MS Volatiles

Lot-Sample #: F9L210106-001 **Work Order #:** D6ME8101 **Matrix:** WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

PARAMETER	CAS #	ESTIMATED RESULT		RETENTION TIME	UNITS
UNKNOWN		5.1	M	23.944	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

BECHTEL HANFORD, INC.

Client Sample ID: B0X5V1

General Chemistry

Lot-Sample #...: F9L210106-001 **Work Order #...:** D6ME8 **Matrix.....:** WATER
Date Sampled...: 12/15/99 **Date Received..:** 12/20/99

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (liquid)	**7.8**		**No Units**	**MCAWW 150.1**	**01/19/00**	**0019358**
	Dilution Factor: 1					
Sulfate	**31.2**	**5.0**	**mg/L**	**MCAWW 375.4**	**01/12-01/20/00**	**0019379**
	Dilution Factor: 1					
Total Residual Chlorine	ND	0.10	mg/L	MCAWW 330.3	01/19/00	0019372
	Dilution Factor: 1					